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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/532,356	04/20/2005	Daniel Linchan	90028.0.1	1569
40320	7590	06/28/2007	EXAMINER	
BURNS & LEVINSON LLP			WARD, JOHN A	
1700 K STREET, NW				
SUITE 720			ART UNIT	PAPER NUMBER
WASHINGTON, DC 20006			2885	
			MAIL DATE	DELIVERY MODE
			06/28/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/532,356	LINEHAN ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	John A. Ward	2885	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### **Status**

- 1) Responsive to communication(s) filed on 20 April 2005.
- 2a) This action is **FINAL**.                                   2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### **Disposition of Claims**

- 4) Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-33 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### **Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### **Priority under 35 U.S.C. § 119**

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### **Attachment(s)**

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)  
 Paper No(s)/Mail Date 082405.
- 4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) Notice of Informal Patent Application
- 6) Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Claim Objections***

Claims 4, 6, 12, 1317, 18, 21, 23, 27-29, 31 and 33 are objected to because of the following informalities: Each claims begins with a capital letter and end with a period the word "Claim" begins with a capital letter. Appropriate correction is required.

Claims 3 and 20 objected to because of the following informalities: the term FR4 is a trademark. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-12, 18-21 and 28-33 are rejected under 35 U.S.C. 102(e) as being anticipated by Yoganandan et al (US 6,949,771).

Regarding claims 1-12 and 28-33, Yoganandan et al disclose a light source having a plurality of light sources 230, a plurality of cavities 220, a substrate 210, insulated body, a FR4 substrate (column 1, lines 39-55), a pad 270 below the substrate

made of copper (column 3, line 66), a plurality of conductors for drive circuit 240, 242 and a plurality of layers 250, 252.

Regarding claims 18-21, Yoganandan et al discloses a light source having a heat sink (column 3, line 66-67 and column 4, lines 1-12), a circuit board material made of FR4 material and figure 17 shows a plural conductors 224 act as a reflective surface.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 13-17 and 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoganandan et al ('771) as applied to claims 7 and 21 above, and further in view of Hochstein (US 6,045,240).

Yoganandan et al disclose all the limitations of the claimed invention as cited above, but does not disclose the thermally conductive structure having a global thermally conductive layer and plural conductors extend underneath the light sources.

Regarding claims 13-17 and 22-23, Hochstein ('240) discloses a LED lamp assembly with means to conduct heat away from the LED's having a plural of light emitting diodes 28, heat sink 36, a cavity 54 and column 6, lines 6-34 teaches of a global thermally conducting layer underneath a cavity of the LED.

Therefore it would have been obvious to one having ordinary skill in the art to combine the light source of Yoganandan et al having a LED sources and heat sink with the LED lamp of Hochstein with conducting plating in order to provide a means of providing a providing heat conduction to a LED as taught by Hochstein (abstract and column 3, lines 58-67 and column 4, lines 1-6).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John A. Ward whose telephone number is 571-272-2386. The examiner can normally be reached on Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jong (James) Lee can be reached on 571-272-7044. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2885

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JAW  
June 20, 2007



JOHN ANTHONY WARD  
PRIMARY EXAMINER